

# SAFER TIMES

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**CALTRANS**

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## THE SAN FRANCISCO RETROFIT PROJECTS OVERVIEW

Here is an update on the five Caltrans earthquake retrofit projects in San Francisco.

### BAYSHORE VIADUCT

The Bayshore Viaduct project targets the elevated highway from Fourth Street to Sixteenth Street. Work began in Spring 1999 and is scheduled for completion in Summer 2002.

### THE WEST SPAN

Retrofit work from Yerba Buena Island to the San Francisco Anchorage began in Summer 1998. Work on the piers and anchorage will be completed by Fall 2001, while the work on the towers and superstructure will continue through 2003.

### THE WEST APPROACH

The West Approach project begins at the anchorage where the West Span project ends, and extends west to the Fifth Street ramps on I-80. Work will begin this Fall and continue to Fall 2007.

### YERBA BUENA ISLAND

Strengthening the Yerba Buena Island viaduct has been completed. Reinforcement of the tunnel portal walls and the rock slope adjacent to the west portal of the tunnel is scheduled for completion this summer.

### THE CENTRAL FREEWAY

The elevated Central Freeway (US 101) connects I-80 with Fell and Oak Streets. Work has been completed to bring the existing structure up to seismic standards. However, an extensive three-year study for environmental review and design for the new structure is underway. Construction is scheduled to begin in Summer 2002.



## BAYSHORE VIADUCT SEISMIC RETROFIT STAGED TO HELP REDUCE IMPACTS

The Bayshore Viaduct, the elevated portion of I-80 that extends from 4th Street to 16th Street in San Francisco, is one of five seismic retrofit projects planned by Caltrans for the western portion of the San Francisco-Oakland bridge system.

The majority of the work on the Bayshore is taking place underneath the structure.

Caltrans is retrofitting the Bayshore in three sub-projects:

- 1) 8th Street to 16th Street,
  - 2) 6th Street to 8th Street and
  - 3) 4th Street to 6th Street.
- Construction began in Spring 1999 and is scheduled for completion in Summer 2002. All of the construction work and

**"The majority of the retrofit work on the Bayshore is taking place underneath the structure."**

parking lot closures are being staged to help minimize the impact on the residents and businesses in the area. The majority of the retrofit work is being done Monday through Friday from 8 am to 7 pm.

Part of the Bayshore Viaduct is built on single steel columns. The engineering strategy is to make pilings deeper, foundations larger and columns stronger. Construction crews are working to strengthen these columns by



Crews working to strengthen the steel columns

bolting on steel plates to prevent lateral movement or shearing. At some locations, a new reinforced concrete structure called a buttress is being added to fortify the existing column. Depending upon the location, either one or two buttresses will be added.

### WHAT ARE THE IMPACTS?

Retrofit of the Bayshore Viaduct has three primary construction impacts: temporary parking loss, construction noise and vibration. Traffic will be affected to a lesser degree.

### Temporary Parking Loss:

Approximately 1500 parking spaces in the vicinity of the Bayshore Viaduct between 4th and 16th Streets will be affected due to the retrofit work. (This is in addition to the loss of 4000 parking spaces anticipated due to an adjacent Caltrans retrofit project from 4th Street to the Bay Bridge anchorage, which is scheduled to begin in Fall 2001.) The Bayshore retrofit work is

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## BAYSHORE VIADUCT RETROFIT



# BAYSHORE VIADUCT SEISMIC RETROFIT

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being staged to avoid eliminating all the parking at one time. The majority of the parking spaces will be re-opened as the retrofit work is completed. Street parking may also be affected in the areas closest to the construction activity. Many of the columns being strengthened in the Bayshore project are near city streets or freeway ramps.

The parking lot on the north side of Brannan Street near 8th Street that closed because of construction in January is scheduled to re-open by November 15.

**Noise and Vibration:** Pile driving is one of the noisiest activities that will occur during the Bayshore retrofit process. This work often produces both noise and vibration. More than 3300 piles will be driven into the ground, some deep into the bedrock.

To minimize the impact of pile driving on residents and structures in the construction area, Caltrans conducted a \$1.7 million test project in which 18 piles were driven at six unique locations by four different hammers to identify the most effective and least disruptive method of driving

piles. Holes have been and will continue to be pre-drilled whenever possible to minimize the noise and vibration.

The retrofit work for each of the three Bayshore projects involves several stages and each stage requires

approximately six months for the work to be completed. The retrofit project between 8th and 16th Streets is scheduled for completion by Summer 2002, and completion of the work between 4th and 8th Streets is planned for Spring 2002.

Most of the pile driving on this project was anticipated to take place during the normal day shift (8 am to 7 pm). However, work in the area between 6th and 8th Streets has been delayed due to unforeseen circumstances. Therefore, it

is now necessary to extend pile driving in this area to 10 pm to avoid further schedule delays or inconveniences to the public in the future. This segment of the pile driving is scheduled to be completed during July and August of this year.

The pile driving near the Gift Center and Jewelry Mart on Brannan Street is expected to generate noise and vibration. This portion of the retrofit construction work will cease for the holiday shopping season November 15 through January 15, 2001.

In an effort to reduce noise, cushions are being placed on top of the pile driving hammers when the retrofit work is close to the sidewalks. Temporary covered sidewalks are also being constructed for pedestrians.

**Traffic:** The traffic impact on motorists has been minimal, although some city streets are being affected due to the nature of the retrofit work. Once again, short-term street closures and temporary elimination of on-street parking will be staged to minimize the impacts on local traffic.

**"Caltrans conducted tests to identify the most effective and least disruptive method of driving piles."**



Project Timeline	1999					2000					2001					2002														
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
4th - 6th Street																														
6th - 8th Street																														
8th - 16th Street																														

## REACHING OUT TO THE COMMUNITY

For the latest information on this project, call the Caltrans SAFER office (from any Bay Area area code) at 817-1717, ext 435 (recorded information is found on ext. 415), or visit our website at [www.safersf.com](http://www.safersf.com). You may also e-mail us directly at [safersf@aol.com](mailto:safersf@aol.com).



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